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Signature

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ground leakage from the pedestal wiring. It was found that the elimination of the wiring and conductors, needed for temperature sensing in the prior art, reduced ground leakage from the chamber through the pedestal. The reduction in ground leakage increases processing performance and enables processes having critical dimensions to be processed more predictably with greater wafer to wafer uniformity.

4. The invention provides a significant number of additional advantages over the state of the art. The invention allows for the use of existing parts (*i.e.*, wiring for driving the heater element) to also function as a sensing instrument, thereby reducing the number of parts in the pedestal. The reduced number of parts not only provides a cost savings, it additionally increases the sectional area for other conduits utilized for routing utilities between pedestal and the exterior of the chamber. This extra sectional area directly attributable to the invention is important due to the premium for space in semiconductor processing systems. Moreover, the utilization of a single conductor for both sensing and driving the heater reduces the complexity of the pedestal assembly and simplifies the passages formed in the pedestal. The reduced complexity and elimination of holes has a significant impact on the material and fabrication costs of the pedestal. Moreover, the reduced wiring components afforded by the invention as it extends the reliability of the pedestal, which is critical given the nature of the cost of replacement parts and lost process throughput associated with systems failure and down time for service and preventative maintenance, particularly as compared to prior art systems having independent sensing and power components and wiring.

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Inventor's signature: Arnold Kholodenko

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